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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/932,704	08/17/2001	Charles Calvin Byers	Byers 41-3	5763

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Docket Administrator (Room 3J-219)
Lucent Technologies Inc.
101 Crawfords Corner Road
Holmdel, NJ 07733-3030

EXAMINER	
BELLO, AGUSTIN	
ART UNIT	PAPER NUMBER
2633	

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/932,704	BYERS ET AL.	
	Examiner	Art Unit	
	Agustin Bello	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/14/03 & 5/3/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 8-9, 11-15, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Hale (U.S. Patent No. 5,572,349).

Regarding claims 1 and 12, Hale teaches generating and distributing a common clock signal to all processing units (column 5 lines 17-20); generating, based on said clock signal, and distributing a common synchronization signal to all processing units (e.g. "sync frame" of column 6 lines 28-30); maintaining in each processing unit, at least one timeslot counter (reference numeral 48 in Figure 6) synchronized to the clock signal (e.g. "Line Rate Clock" in Figure 6) and to the common synchronization signal (e.g. "sync frame" of column 6 lines 28-30); maintaining in each processing unit, a set of timeslot maps (e.g. "unique reference pattern" of column 6 line 61 – column 7 line 5 found by decoder reference numeral 46 in Figure 6) synchronized to said at least one timeslot counter (reference numeral 48 in Figure 6), deriving an enable signal from the contents of the timeslot map to enable transmission of data into the beam line (e.g. "positions of the multiframes can be determined" of column 7 line 1-5); and deriving an enable signal from the contents of the timeslot maps to enable one or more receivers to extract data from the beam line (e.g. "positions of the multiframes can be determined" of column 7 line 1-5). Clearly, the processing units of Hale determine the positions of the unique multiframes

designated to each processing unit in order to determine transmission and reception of data according to the time division multiplexing scheme, thereby enabling data transmission and reception between the processing unit and the signal generator (see column 4 lines 54-62, column 7 lines 6-34).

Regarding claims 2 and 13, Hale teaches generating a timeslot sync signal (e.g. "sync frame" of column 6 lines 28-30), sending said timeslot sync signal to each of said processing units (inherent); receiving said timeslot sync signal at each of said sync pattern detectors (reference numeral 52 in Figure 6); and synchronizing said enable signal in each of said processing units (see column 4 lines 54-62, column 7 lines 6-34). Clearly, the processing units of Hale determine the positions of the unique multiframes designated to each processing unit in order to determine transmission and reception of data according to the time division multiplexing scheme, thereby enabling data transmission and reception between the processing unit and the signal generator.

Regarding claims 3 and 14, Hale teaches generating a frame sync pattern (e.g. "sync frame" of column 6 lines 28-30), sending said frame sync pattern to each of said processing units (inherent); receiving said frame sync pattern at each of said frame sync pattern detectors (reference numeral 52 in Figure 6), and synchronizing said timeslot counter in each of said processing units (see column 4 lines 54-62, column 7 lines 6-34).

Regarding claim 4, Hale teaches injecting said signals into said beam line (e.g. transmission of the "sync frame" to each processing unit).

Regarding claims 5 and 15, Hale teaches initializing and maintaining said timeslot maps using said geographic address input (e.g. phase-2 ranging section R of Figure 2, the

corresponding control signals from the OLT to the ONU, Hale's reference to "appropriately-addressed" portions of data in column 1 lines 33-36, and Hale's disclosure of "control channels addressed to specific ones of the ONUs" in column 4 lines 49-53).

Regarding claim 8, Hale teaches enabling one or more receivers (reference numeral 24, 26 in Figure 3, reference numeral 108, 110 in Figure 8) comprising enabling a plurality of receivers to simultaneous receive signals creating multicast channels (e.g. "point-to-multipoint" distribution of column 2 lines 7-10).

Regarding claims 9 and 18, Hale teaches that said signal generator includes guard band logic, said method further including the step of: periodically inserting guard bands into said beam line (e.g. "Quiet Phase" in Figure 2).

Regarding claim 11, Hale teaches distributing timeslots assigned to a given channel evenly throughout said timeslots to minimize latency (inherent in the time division multiplexing system of Hale), said step of deriving an enable signal occurring serially across all of said processing units (e.g. "point-to-multipoint" distribution of column 2 lines 7-10).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 6, 7, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hale.

Regarding claims 6, 7, 16 and 17, Hale differs from the claimed invention in that Hale fails to specifically teach the use of transmitting and receiving queues. However, transmitting and receiving queues are well known in the art, and particularly well known in time division multiplexing systems. One skilled in the art would have been motivated to include transmitting and receiving queues in the system of Hale since the timing of transmitted and received signals is crucial in a time division multiplex system such as Hale's. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to include transmitting and receiving queues in the system of Hale in order to ensure proper timing of the transmitted and received data.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hale in view of Zikan (U.S. Patent No. 6,310,881).

Regarding claim 10, Hale differs from the claimed invention in that Hale fails to specifically teach updating said timeslot mapping to provide dynamic load balancing. However, updating time slot mapping in order to provide dynamic load balancing is well known in the art. Zikan in the same filed of time division multiplexing teaches as much (abstract and Figures 2 and 3). One skilled in the art would have been motivated to include updating of the time slot mappings in the system of Hale in order to provide dynamic load balancing in order to ensure the optimal use of the systems resources, namely bandwidth. Furthermore, Hale suggests updating time slot mappings in order to provide dynamic load balancing in that Hale teaches distribution of the bandwidth of the system flexibly by allowing timeslots to be mapped to any other timeslot (column 2 lines 7-18). Therefore, it would have been obvious to one skilled in the art at the time

the invention was made to allow updating of the time slot mappings in the system of Hale in order to provide dynamic load balancing.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kanajim Masucci, Stevens, Grimes, and Van As teach relevant art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (571) 272-3026. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Agustin Bello
Examiner
Art Unit 2633

AB

A. Bello
10/26/04